Lenovo® recommends Windows Vista® Business.

ULTIMATE PERFORMANCE TO UNLEASH YOUR FULL POTENTIAL.

THINKSTATION® S20 & D20

From Lenovo's exceptional engineers comes the next generation of ThinkStation®, designed exclusively for specialized professionals using graphically and computationally intensive applications. Its groundbreaking design ramps up parallel workflows, enabling professional users to quickly bring their ideas to life.

Equipped with the latest technology from Intel®, the ThinkStation delivers performance that is simply unattainable with a standard desktop PC. The ThinkStation S20 and D20's powerful and efficient Intel® Xeon® processors speed through even the toughest workloads. Sporting up to eight powerful processing cores, the new ThinkStation comes fully equipped with an on-chip memory controller and Intel® QuickPath Interconnect, allowing you to innovate faster than ever before.

The Lenovo ThinkStation has an environmentally conscious, user-centric design that ultimately results in increased productivity. In addition, the performance and quality-focused Lenovo ThinkStation supports ThinkVantage® Technologies such as Rescue and Recovery™ and Client Security Solution, providing users with superior data security.

EXTREME PERFORMANCE

- Brand-new Intel® Xeon® CPUs on both S and D series workstations deliver unmatched performance with incredible efficiency
- ThinkStation workstations come armed with a full line of bleeding-edge graphics technologies, including the NVIDIA® QUADRO® line, supporting SLI on select D Series configurations, and ATI® FirePro™ graphics
- With up to a 1060W power supply on the D series, ThinkStation delivers all the juice your key components need to maintain peak performance

QUIET AND RELIABLE

- The ThinkStation's 24db idle operating noise level makes it nearly undetectable
- ThinkStation's unique thermal design is engineered for maximum cool air delivery to key components, reducing the risk of hardware failure

ENVIRONMENTALLY RESPONSIBLE

- Both the S20 and D20 are EPEAT™ GOLD, GREENGUARD® Certified
- The ThinkStation S20 and D20 contain more than 50% recycled plastics, including 26% post-consumer content
- All ThinkStation models are RoHS compliant
- Many ThinkStation models are Energy Star® 5.0 compliant

ENGINEERED FOR THE ULTIMATE USER EXPERIENCE

- The ThinkStation's secure premium cover latch makes the cover easily removable, allowing users to make instant upgrades
- The ThinkStation's illuminated front panel and icons make ports easily accessible, especially in studio and office environments
- The ThinkStation's ergonomically designed, removable handle makes it easy to carry, move and manage
- Rack implementation is possible both in the ThinkStation S20 and the ThinkStation D20

TOP REASONS TO OWN

- THE ULTIMATE USER-FRIENDLY WORKSTATION EXPERIENCE
- PERFORMANCE THAT TAKES EXTREME SPEED AND EFFICIENCY TO NEW LEVELS
- COOL AND QUIET
- POWER AND EXPANDABILITY THAT'S UNATTAINABLE ON A DESKTOP PC
- TESTED AND CERTIFIED BY ISVs

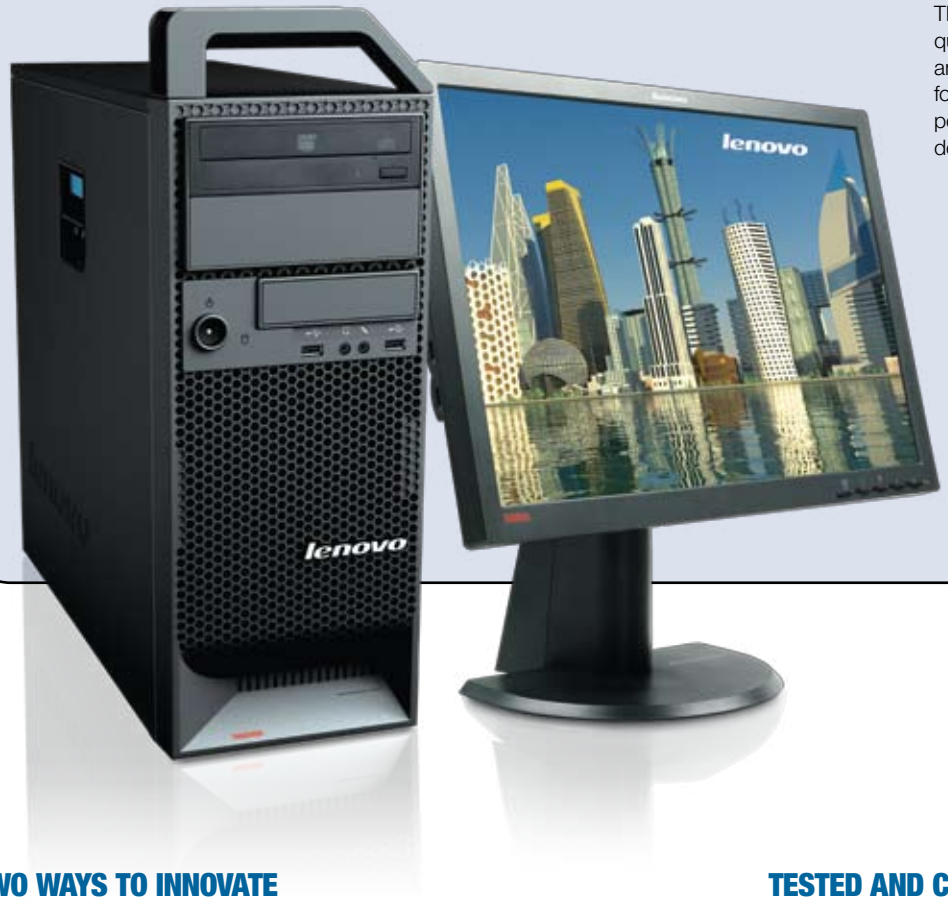
ThinkStation™ Ideas
Energy Efficient
Low Operating Noise
Greater Expandability
Extreme Performance

lenovo®
NEW WORLD. NEW THINKING.™

Lenovo® recommends Windows Vista® Business.

CUTTING-EDGE POWER.

THINKSTATION® S20 & D20



The ThinkStation® is a high performance, high quality workstation designed to run graphically and computationally intensive applications for professional users who require a level of performance unattainable with a standard desktop PC.

TWO WAYS TO INNOVATE

- All Lenovo ThinkStation workstations share common features that showcase Lenovo's dedication to quality, including quiet acoustics, a cool thermal design, RAID standard, back-lit front I/Os and tool-less upgrades. Both the S20 and D20 also feature unique qualities that make them a great match for your individual needs.
- The single-processor Intel® Xeon® ThinkStation S20 is the ideal mid-range workstation solution. Offering a robust 625W power supply, even the S20 allows for easy upgrades and offers support for two high-end powered graphics adapters. It is ideal for 2D digital content creators and users of mid-range CAD and EDA applications.
- The dual-processor Intel® Xeon® ThinkStation D20 is a computational powerhouse. Offering 12 DIMM slots and RDIMM technology, the D20 supports up to 96GB of blazing-fast DDR3 memory and is perfect for users of memory and CPU-hungry applications like high-end CAD/CAM/CAE, 3D digital content creation and professional video editing software. The D20 also offers 1394 and SAS support standard, support for NVIDIA's Tesla™ C1060 GPU computing solution and NVIDIA SL on select Quadro cards, as well as more expandability options than the S Series.

TESTED AND CERTIFIED BY ISVs

Lenovo is working closely with leading software partners — such as Autodesk®, Dassault Systèmes® and PTC® — to ensure optimum performance and stability in the demanding applications you use every day. Independent Software Vendors (ISVs) test and certify system and application compatibility, providing you the assurance of a robust and reliable platform.

LEADING INTEL® TECHNOLOGIES

The new performance-driven Intel® Xeon® micro architecture utilizes Intel's new 45nm technology for energy-efficient, multi-core processing.

- More instructions per clock and improved caching
- Dynamic Power Management for less energy consumption during periods of low utilization
- Intel® Turbo Boost technology for additional performance during peak processing

Additionally, Intel's newest Xeon® processors deliver world class performance combined with superior energy efficiency through a large latency decrease and a bandwidth increase over previous generation workstations.

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THINKSTATION® S20/D20 WORKSTATION SPECIFICATIONS AND SERVICES

S20

Dual-Core

Intel® Xeon® Processor W3503 - 2.4Ghz - 4.8 QPI, 4MB L2, DDR3-1066, 130W
Intel® Xeon® Processor W3505 - 2.53Ghz - 4.8 QPI, 4MB L2, DDR3-1066, 130W
Intel® Xeon® Processor E5502 - 1.86GHz - 4.8 QPI, 4MB L2, DDR3-800, 80W

Quad-Core

Intel® Xeon® Processor W3520 - 2.66Ghz - 4.8 QPI, 8MB L2, DDR3-1066, Turbo, HT, 130W
Intel® Xeon® Processor W3540 - 2.93GHz - 4.8 QPI, 8MB L2, DDR3-1066, Turbo, HT, 130W
Intel® Xeon® Processor W3570 - 3.2GHz - 6.4 QPI, 8MB L2, DDR3-1333, Turbo, HT, 130W
Intel® Xeon® Processor E5504 - 2.00GHz - 4.8 QPI, 4MB L2, DDR3-800, 80W
Intel® Xeon® Processor E5506 - 2.13GHz - 4.8 QPI, 4MB L2, DDR3-800, 80W
Intel® Xeon® Processor E5520 - 2.26GHz - 5.86 QPI, 8MB L2, DDR3-1066, Turbo, HT, 80W
Intel® Xeon® Processor E5530 - 2.40GHz - 5.86 QPI, 8MB L2, DDR3-1066, Turbo, HT, 80W
Intel® Xeon® Processor E5540 - 2.53GHz - 5.86 QPI, 8MB L2, DDR3-1066, Turbo, HT, 80W

Extreme

Intel® Xeon® Processor X5550 - 2.66GHz - 6.4 QPI, 8MB L2, DDR3-1333, Turbo, HT, 95W
Intel® Xeon® Processor X5560 - 2.80GHz - 6.4 QPI, 8MB L2, DDR3-1333, Turbo, HT, 95W
Intel® Xeon® Processor X5570 - 2.93GHz - 6.4 QPI, 8MB L2, DDR3-1333, Turbo, HT, 95W
Intel® Xeon® Processor W5580 - 3.20GHz - 6.4 QPI, 8MB L2, DDR3-1333, Turbo, HT, 130W

D20

Dual-Core

Intel® Xeon® Processor E5502 - 1.86GHz - 4.8 QPI, 4MB L2, DDR3-800, 80W

Quad-Core

Intel® Xeon® Processor E5504 - 2.00GHz - 4.8 QPI, 4MB L2, DDR3-800, 80W
Intel® Xeon® Processor E5506 - 2.13GHz - 4.8 QPI, 4MB L2, DDR3-800, 80W
Intel® Xeon® Processor E5520 - 2.26GHz - 5.86 QPI, 8MB L2, DDR3-1066, Turbo, HT, 80W
Intel® Xeon® Processor E5530 - 2.40GHz - 5.86 QPI, 8MB L2, DDR3-1066, Turbo, HT, 80W
Intel® Xeon® Processor E5540 - 2.53GHz - 5.86 QPI, 8MB L2, DDR3-1066, Turbo, HT, 80W
Intel® Xeon® Processor W5580 - 3.20GHz - 6.4 QPI, 8MB L2, DDR3-1333, Turbo, HT, 130W

Extreme

Intel® Xeon® Processor X5550 - 2.66GHz - 6.4 QPI, 8MB L2, DDR3-1333, Turbo, HT, 95W
Intel® Xeon® Processor X5560 - 2.80GHz - 6.4 QPI, 8MB L2, DDR3-1333, Turbo, HT, 95W
Intel® Xeon® Processor X5570 - 2.93GHz - 6.4 QPI, 8MB L2, DDR3-1333, Turbo, HT, 95W

		S20	D20
Operating Systems	Available Preloads	Genuine Windows Vista® Business 32 Genuine Windows Vista® Business 64	Genuine Windows Vista® Business 32 Genuine Windows Vista® Business 64
	Supported	Genuine Windows Vista® downgrade to Genuine Windows® XP Professional 32-bit Genuine Windows® XP Professional 64-bit Red Hat® Enterprise Linux® 5.2 64-bit	Genuine Windows Vista® downgrade to Genuine Windows® XP Professional 32-bit Genuine Windows® XP Professional 64-bit Red Hat® Enterprise Linux® 5.2 64-bit t
Graphics	from NVIDIA®	NVIDIA® Quadro® NVS 290 NVIDIA Quadro FX 380 NVIDIA Quadro FX 580 NVIDIA Quadro FX 1800 NVIDIA Quadro FX 4800	NVIDIA Quadro NVS 290 NVIDIA Quadro FX 380 NVIDIA Quadro FX 580 NVIDIA Quadro FX 1800 NVIDIA Quadro FX 4800
	ATI®	ATI® FirePro® V3700 ATI FirePro V5700 ATI FirePro V7750	ATI FirePro V3700 ATI FirePro V5700 ATI FirePro V7750
		Any combination of two of the above cards is supported.	
Hard Disk Drives	SATA - 3.5", 7200 rpm	250GB, 500GB, 750GB, 1.0TB	250GB, 500GB, 750GB, 1.0TB
	SATA - 2.5", 10000 rpm	74GB, 150GB, 300GB	74GB, 150GB, 300GB
	SAS* - 3.5", 15000 rpm	147GB, 300GB	147GB, 300GB
		*Adapter card required for SAS on ThinkStation S20	
Optical Drives		DVD-ROM	DVD-ROM
		DVD +/- RW DL	DVD +/- RW DL
		Blu-ray™ Disc Burner	Blu-ray™ Disc Burner
Physical	Chassis Form Factor	Mid-Tower	Tower
	Dimensions (without handle)	426 x 175 x 483mm	434 x 210 x 602mm
	Weight (typical config.)	~15 kg	~25kg
	Internal Speaker	Standard	Standard
	Rack Mounting	Via rack shelf	Via shelf or optional rail kit
Slots/Bays	Gen 2 PCIe x16 Slots	2	2
	PCIe x 4 Slots	1 (x16 physical)	1 (x16 physical)
	PCIe x 1 Slots	1	2
	PCI Slots	1	2
	3.5" Internal Bays	3	5
	3.5" External Bays	1	1
	5.25" External Bays	2	3
Motherboard	Form Factor	Full ATX	Extended ATX
	Chipset	Intel® Tylersburg 36S	Intel® Tylersburg 36D
	Ethernet	Broadcom 5755	1x Broadcom 5755 plus 1x Broadcom 5754
	SATA/SAS Connectors	1 eSATA, 5 SATA Gen 2	1 eSATA, 5 SATA Gen 2, 5 SAS
	Memory Type	DDR3 ECC UDIMM	DDR3 ECC UDIMM and DDR3 RDIMM
	Memory Speed	Up to 1333MHz	Up to 1333MHz
	DIMM Slots	6	12
	Maximum Memory	12GB	96GB
Power Supply	Wattage	625W	1060W
	Efficiency	85%+	85%+
	Rating	100-127/200-240V 8/4A	100-127/200-240V 12/6A
Environmental	EPEAT Rating	Gold	Gold
	Energy Star 5.0	Select Models	Select Models
	RoHS Compliant	Yes	Yes
	Total Recycled Plastic Content	50%	50%
	Post Consumer Recycled Content	~26%	~27%
	GREENGUARD® Certified	Yes	Yes
Front I/O	Back-lit Icons	Yes	Yes
	IEEE 1394	No	Standard 6-pin
	Memory Card Reader	20-in-1	20-in-1
	Analog Audio	Stereo, Mic	Stereo, Mic
Rear I/O	Serial	1 (2nd Optional)	1 (2nd Optional)
	Ethernet	Gigabit (RJ45)	2x Gigabit (RJ45)
	IEEE 1394	Optional via Card	Standard 6-pin
	USB	8	8
	Analog Audio	6 Connectors for 7.1 HD Audio	6 Connectors for 7.1 HD Audio
	eSATA	1	1
	Digital Audio	1 Optical In, 1 Optical Out	1 Optical In, 1 Optical Out

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Extreme Performance

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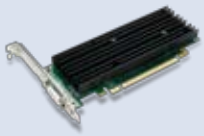
THINKSTATION® S20/D20 WORKSTATION ACCESSORIES AND OPTIONS

	ThinkStation S20	ThinkStation D20

Lenovo® ThinkVision™ L2440p Wide Monitor
(4420-HB2) The L2440p is a champion for the environment, meeting the new ENERGY STAR 5.0 and EPEAT Gold certifications. Wide LCD supporting 1920x1200 WUXGA with full HD. 92% colour gamut for displaying vibrant colours. Analog and digital input. Tilt, swivel, and height-adjustable stand for optimum viewing comfort.

www.lenovo.com/thinkvision; www.lenovo.com/support/monitoraccessories



Graphic Adapters
Full range of graphic cards, from 2D business graphics to 3D ultra-high CAD and Digital Content Creation.

(43R1765) NVIDIA® Quadro® NVS 290 Dual Digital or Dual Analog
(45K1670) NVIDIA Quadro FX 380 Dual DVI-I
(45K1672) NVIDIA Quadro FX 1800 Dual DisplayPort, DVI-I
(45K1674) NVIDIA Quadro FX 4800 Dual DisplayPort, DVI-I, Stereo
(51J0510) ATI FirePro V5700 Dual DisplayPort, DVI-I

(45K1669) NVIDIA Quadro NVS 295* Dual-DisplayPort
(45K1671) NVIDIA Quadro FX 580 Dual DisplayPort, DVI-I
(45K1673) NVIDIA Quadro FX 3800* Dual DisplayPort, DVI-I, Stereo
(51J0509) ATI® FirePro® V3700 Dual DVI-I
(51J0511) ATI FirePro V7700 Dual DisplayPort, DVI-I

www.lenovo.com/support/graphiccards

** Available in April 2009*

Workstation UDIMM memory
Adding memory is a cost-effective method to boost system performance and productivity
(45K1670) PC3-10600 1333MHz DDR3 ECC UDIMM Memory – 1GB
(45K1671) PC3-10600 1333MHz DDR3 ECC UDIMM Memory – 2GB
(51J0503) PC3-8500 1066MHz DDR3 ECC UDIMM Memory - 1GB
(51J0504) PC3-8500 1066MHz DDR3 ECC UDIMM Memory - 2GB

Workstation UDIMM and RDIMM memory
Adding memory is a cost-effective method to boost system performance and productivity
(45K1670) PC3-10600 1333MHz DDR3 ECC UDIMM Memory – 1GB
(45K1671) PC3-10600 1333MHz DDR3 ECC UDIMM Memory – 2GB
(51J0503) PC3-8500 1066MHz DDR3 ECC UDIMM Memory - 1GB
(51J0504) PC3-8500 1066MHz DDR3 ECC UDIMM Memory - 2GB
(43R2034) PC3-8500 1066MHz DDR3 RDIMM Memory – 1GB
(43R2035) PC3-8500 1066MHz DDR3 RDIMM Memory – 2GB
(43R2036) PC3-8500 1066MHz DDR3 RDIMM Memory – 4GB
(43R2037) PC3-8500 1066MHz DDR3 RDIMM Memory – 8GB

Storage
Expand hard disk drive capacity and store more data

(41N3015) Lenovo 250GB 7200 rpm Serial ATA Hard Drive
(43R1991) Lenovo 750GB 7200 rpm Serial ATA Hard Drive
(43R2030) Lenovo 150GB 10K rpm Serial ATA Hard Drive
(43R1993) ThinkStation 146GB 15K rpm SAS Hard Drive

(43R1990) Lenovo 500GB 7200 rpm Serial ATA Hard Drive
(45J7918) Lenovo 1TB 7200 rpm Serial ATA Hard Drive
(43R2031) Lenovo 300GB 10K rpm Serial ATA Hard Drive
(43R1994) ThinkStation 300GB 15K rpm SAS Hard Drive

Mixing of Serial ATA and SAS Hard Drives is not recommended. Most S-Series models are configured with Serial ATA Hard Drives and most D-Series models are configured with SAS Hard Drives.

Lenovo® Memory Keys
Easily carry data with you between systems. A slim design allows space for other USB devices to be installed in adjoining USB ports.
(41U5120) Lenovo USB 2.0 Security Memory Key – 4GB **(45J5917)** Lenovo USB Ultra Secure Memory Key – 4GB
(45J5918) Lenovo USB Ultra Secure Memory Key – 8GB **(45K1258)** Lenovo USB 2.0 Essential Memory Key - 32GB

Intel® Xeon® Processors
Elite performance; add a 2nd processor to ThinkStation D20
(43R2038) Intel® Xeon® Processor E5520: 2.26GHz, 1066MHz, 8MBL2
(43R2039) Intel® Xeon® Processor E5530: 2.40GHz, 1066MHz, 8MBL2
(43R2040) Intel® Xeon® Processor E5540: 2.53GHz, 1066MHz, 8MBL2
(43R2042) Intel® Xeon® Processor X5550: 2.66GHz, 1333MHz, 8MBL2
(43R2043) Intel® Xeon® Processor X5560: 2.80GHz, 1333MHz, 8MBL2

ThinkStation Rail Kit
(43R1964) Easily install the ThinkStation D20 into a rack for data center environments

Kensington Twin Head Cable Lock
(45K1620) Secure ThinkStation® and/or a LCD monitor with a 6-foot (1.8m) steel composite cable with Kevlar brand fiber security cable lock. Meets the SAFE PRO security rating.

www.lenovo.com

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Energy Efficient
Low Operating Noise
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Extreme Performance

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